REMARKS

INTRODUCTION:

The disclosure was objected to because of informalities.

Claims 23 and 30 are rejected under 35 U.S.C. §112.

Claims 1, 27, 31-33 and 37 are rejected under 35 U.S.C. § 102(b) as being anticipated by JP 50 003 570, dated 1/14/1975.

Claims 2-3, 8, 12, 14, 28-30 and 35-36 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Seki et al. (JP 09-251839) in view of Dynka et al. (USPN 5,697,825) and JP '3570.

Claims 4 and 11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Seki et al. (JP 09-251839) in view of Dynka et al. (USPN 5,697,825), JP '3570, and further in view of Murai et al. (5,754,003).

Claims 6, 9, 15, 17, 18 and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Seki et al. (JP 09-251839), Dynka et al. (USPN 5,697,825), and JP '3570 as applied to claim 1 or over Seki et al. (JP 09-251839), Dynka et al. (USPN 5,697,825), and JP '3570, and Murai et al. (5,754,003) as applied to claim 4, further in view of Itoh et al. (6,039,620).

These rejections are respectfully traversed.

Claims 5, 7, 10, 13, 16, 19, 21-23, 25, 26, and 34 would be allowable if rewritten or amended suitably.

In accordance with the foregoing, claims 1, 3-9, 11, 15, 27, and 30-37 have been amended, new claim 38 has been added, and claims 2 and 10 have been cancelled without prejudice or disclaimer. No new matter has been added.

Claims 1, 3-9, and 11-38 are pending and under consideration.

Reconsideration is requested.

OBJECTIONS TO DISCLOSURE:

At page 2 of the Office Action, the disclosure is objected to because of informalities.

Paragraph 109 has been amended to replace the terminology "do not occur" with ---enlarge--. Thus, paragraph 109 is now believed to be clear.

Paragraph 104 has been amended to insert --- As is known to those skilled in the art, the softening point is the temperature in which the strain of a glass in the form of fiber of 0.75 mm in diameter and 235 mm long elongates under its own weight at a rate of 1 mm/min, and the viscosity is approximately $10^{7.6}$ poise.--- Attached hereto are Material #1, in which the part underlined

corresponds to the description inserted, and Material #2, for the title of the reference, the publisher and the date of publishing of Material #1. Since this information is known to those skilled in the art, no new matter is being added.

It should be noted that the glass can soften at a temperature lower than the softening point, as shown in paragraph 104, where the sealant 104 has a softening point of approximately 420°C to 440°C, while the melting start temperature is approximately 370°C to 390°C, which is lower than the softening point temperature.

As set forth above, the glass has a high viscosity at the softening point and a higher viscosity at temperatures lower than the softening point. At the softening point, the glass will sag due to its own weight. (see attachment of product information for Kapoor Glass (India) Pvt. Ltd downloaded from www.kapoorglass.com/tech.htm). However, it is not correct to say that the glass at the softening point is in the liquid state.

Thus, to those skilled in the art, it is clear that the applicant is not referring to a liquid state of glass when the terminology "softening point" is utilized.

Hence, paragraphs 104 and 109 are now believed to be clear, and reconsideration is respectfully requested.

35 U.S.C. §112 REJECTIONS

At page 3, claims 23 and 30 are rejected under 35 U.S.C. §112.

These rejections are traversed and reconsideration is requested.

It is respectfully submitted that glass is an amorphous solid that does not melt in the traditional sense that a crystalline polymer exhibits. A crystalline polymer melts when the polymer chains fall out of their crystalline structures and become a disordered liquid. However, glass comprises unordered chains and simply begins to transition to a different state at a particular temperature depending on the ease of moving the polymer chains. The transition point of the glass may be lower than the softening point (see Table 1 of USPN 6,475,605, enclosed herewith).

Thus, as described above, the glass may start to deform or melt at a lower temperature than the softening point. Therefore, claim 23 is consistent with the disclosure and in the description of paragraph 104.

Also, paragraph 104 recites "Around 350°C to 370°C, which is immediately below the melting start temperature, the gap 105 shown in FIG. 10, in the sealant 104 is still maintained." The gap is thin and has a seal 104 (which is not melted because the temperature is below the melting temperature), and the paragraph recites exhaustion of the gas remaining the space, producing a

pressure difference. It is respectfully submitted that paragraph 80 recites " different seal heads are attached to the conduction pipes 35a and 35b and the exhaust of the discharge spaces and the introduction of discharge gas are effected through different piping systems." Thus, claim 30 has been amended for clarity.

Claims 23 and 30 are now deemed to point out and claim the subject matter which applicants regards as their invention.

Reconsideration is respectfully requested.

35 U.S.C. §102 REJECTIONS

At pages 3-4 of the Office Action, claims 1, 27, 31-33 and 37 are rejected under 35 U.S.C. § 102(b) as being anticipated by JP 50 003 570, dated 1/14/1975.

It is respectfully submitted that JP 50 003 570 does not disclose exhausting the inner (discharge) space of the PDP before the sealant starts to melt. That is, in the reference, exhausting is started when the sealant is already melted (see translation, page 7, line 14, from five lines from the bottom to the bottom). In contrast, in the present invention, the stacked front and back substrates are heated (perhaps by placing them in a furnace) and exhausted. For an understanding of a potential process, refer to paragraphs 52 to 55 of the present application. For clarity, claims 1, 27, and 31 have been amended to add terminology to recite that the lowering of the pressure takes place before the sealant starts to melt. Thus claims 1, 27, 31 and the claims depending therefrom are now believed to be allowable over JP 50 003 570 under 35 U.S.C. § 102(b).

Reconsideration is respectfully requested.

35 U.S.C. §103 REJECTIONS

A. Claims 2-3, 8, 12, 14, 28-30 and 35-36 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Seki et al. (JP 09-251839) in view of Dynka et al. (USPN 5,697,825) and JP '3570.

Independent claims 1, 27 and 31 have been amended (see above) to show more clearly the distinctions over JP '3570. Thus, claims 2-3, 8, 28-29 and 35-36, which depend therefrom, respectively, are also distinguished over JP '3570. Claims 12 and 30 already include the terminology that the pressure is lowered before the furnace is raised to a melting temperature, which differentiates claims 12 and 30 from JP '3570. Since claim 14 depends from claim 12, claim 14 is also distinguished over JP '3570 for at least the same reasons that claim 12 is distinguished over JP '3570. Claim 2 has been cancelled.

Seki et al. discloses in paragraph 10 that the substrates A and B are positioned apart from each other by a machine, and in paragraph 11, after the temperature in the kiln is raised to a temperature sufficient to melt the sealing agent, the surface glass substrate A is dropped down to stick to the other glass substrate using a motor. Thus, Seki et al. does not teach or suggest that lowering of the pressure takes place before the sealant starts to melt, as is described in the present invention.

Claims 12, 14, and 30 recite that the pair of substrates are positioned with a "predetermined interval therebetween." The claims make no mention of the substrates being moved by a mechanical device, such as a motor, as is taught by Seki et al. Dynka et al. teaches forming a cover plate, a backplate and a peripheral seal therebetween wherein the evacuating and sealing process are accomplished in stages comprising pumping out the space to a negative pressure, gradually increasing temperature, and achieving a predetermined temperature and pressure within the reaction chamber (see col. 8, lines 27-32). The claims recite that the pressure is lowered while heating, and thereby melting, the sealant. The claims are silent regarding evacuation before heating. Thus, Dynka et al. does not teach or suggest the method of the present invention.

Thus, Seki et al. (JP 09-251839) in view of Dynka et al. (USPN 5,697,825) and JP '3570, taken alone or in combination, do not teach or suggest claims 3, 8, 12, 14, 28-30 and 35-36 of the present invention.

Hence, it is respectfully submitted that claims 3, 8, 12, 14, 28-30 and 35-36 are patentable over Seki et al. (JP 09-251839) in view of Dynka et al. (USPN 5,697,825) and JP '3570 under 35 U.S.C. § 103(a).

B. Claims 4 and 11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Seki et al. (JP 09-251839) in view of Dynka et al. (USPN 5,697,825), JP '3570, and further in view of Murai et al. (5,754,003).

Since amended claim 1 is deemed to be allowable over Seki et al. (JP 09-251839) in view of Dynka et al. (USPN 5,697,825), and JP '3570 under 35 U.S.C. § 103(a), claim 4 (which depends therefrom) is also deemed to be allowable over Seki et al. (JP 09-251839) in view of Dynka et al. (USPN 5,697,825), and JP '3570 under 35 U.S.C. § 103(a).

Claim 11 has been amended to insert "before the sealant starts to melt" after "exhausting the discharge space between the pair of opposed substrates." Thus, claim 11 is believed to be allowable over JP '3570.

Claim 11 is believed to be allowable over Seki et al. (JP 09-251839) in view of Dynka et al. (USPN 5,697,825) for the same reasons set forth for claims 1, 27 and 31 (see above).

Murai et al. teaches utilizing a plurality of partition walls to define a plurality of discharge chambers, wherein the partition walls are softened and deformed by squeezing forces to form gas tight, but not evacuated, spaces. A plurality of height adjusting layers are interposed between end faces of the partition walls. On the other hand, according to claims 4 and 11, the discharge space is exhausted.

Thus, it is respectfully submitted that claims 4 and 11 are allowable under 35 U.S.C. § 103(a) and are patentable over Seki et al. (JP 09-251839) in view of Dynka et al. (USPN 5,697,825), JP '3570, and further in view of Murai et al. (5,754,003), taken alone or in combination.

C. Claims 6, 9, 15, 17, 18 and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Seki et al. (JP 09-251839), Dynka et al. (USPN 5,697,825), and JP '3570 as applied to claim 1 or over Seki et al. (JP 09-251839), Dynka et al. (USPN 5,697,825), and JP '3570, and Murai et al. (5,754,003) as applied to claim 4, further in view of Itoh et al. (6,039,620).

It is respectfully submitted that claims 6, 9, 15, 17, 18 and 20 are allowable over 35 U.S.C. § 103(a) and are patentable over Seki et al. (JP 09-251839), Dynka et al. (USPN 5,697,825), and JP '3570 as applied to claim 1 or over Seki et al. (JP 09-251839), Dynka et al. (USPN 5,697,825), and JP '3570, and Murai et al. (5,754,003) for at least the reasons recited above.

Itoh et al. teaches evacuating and sealing a hermetic vessel at the same time. However, Itoh et al. fails to teach melting the sealant, as is recited by the present invention.

Claim 10 has been cancelled, and the subject matter therein has been appended to claim 9.

With respect to claim 15, Seki et al. does not teach or suggest stacking the substrates, and Dynka et al. and JP '3750 do not teach or suggest heating the pair of substrates to raise a temperature of the pair of substrates and exhausting gas from, and lowering a pressure in, a space surrounding the pair of the substrates to remove any impurities in the discharge space between the substrates.

Thus, it is respectfully submitted that claims 6, 9, 15, 17, 18 and 20 are allowable under 35 U.S.C. § 103(a) and are patentable over Seki et al. (JP 09-251839), Dynka et al. (USPN 5,697,825), and JP '3570 as applied to claim 1 or over Seki et al. (JP 09-251839), Dynka et al. (USPN 5,697,825), and JP '3570, Murai et al. (5,754,003) and further in view of Itoh et al. (6,039,620), taken alone or in combination.

NEW CLAIM:

New claim 38 recites that the features of the present invention include a method of manufacturing a gas discharge panel having a pair of substrates sealed together with a sealant and

defining a discharge space therebetween, comprising forming the sealant along a periphery of at least one of the substrates, and stacking said substrates, one upon the other; lowering a pressure in the discharge space between the pair of substrates before the sealant starts to swell, relative to a pressure on exterior of the pair of substrates, by exhausting the discharge space, while heating and thereby melting the sealant, wherein exhausting is stopped once during a state of the sealant being melted; and sealing the pair of substrates.

Nothing in the prior art teaches or suggests such. It is submitted that this new claim distinguishes over the prior art.

CONCLUSION:

In accordance with the foregoing, it is respectfully submitted that all outstanding objections and rejections have been overcome and/or rendered moot, and further, that all pending claims patentably distinguish over the prior art. Thus, there being no further outstanding objections or rejections, the application is submitted as being in condition for allowance, which action is earnestly solicited.

If the Examiner has any remaining issues to be addressed, it is believed that prosecution can be expedited by the Examiner contacting the undersigned attorney for a telephone interview to discuss resolution of such issues.

If there are any underpayments or overpayments of fees associated with the filing of this Amendment, please charge and/or credit the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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Date: Sept 11 2003

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